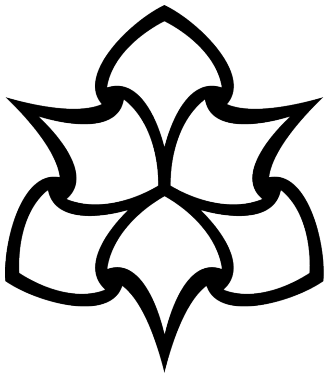


Manchester Metropolitan University

Kelly, Rachel ORCID logoORCID: https://orcid.org/0000-0002-4385-0131 (2019) The digitisation of Cordillera Weaving: Designing a new oral tradition. In: Design Research for Change (DR4C) 2019 Symposium, 11 December 2019 - 12 December 2019, Design Museum, London.

Downloaded from: https://e-space.mmu.ac.uk/625537/

Version: Published Version

Publisher: Lancaster University

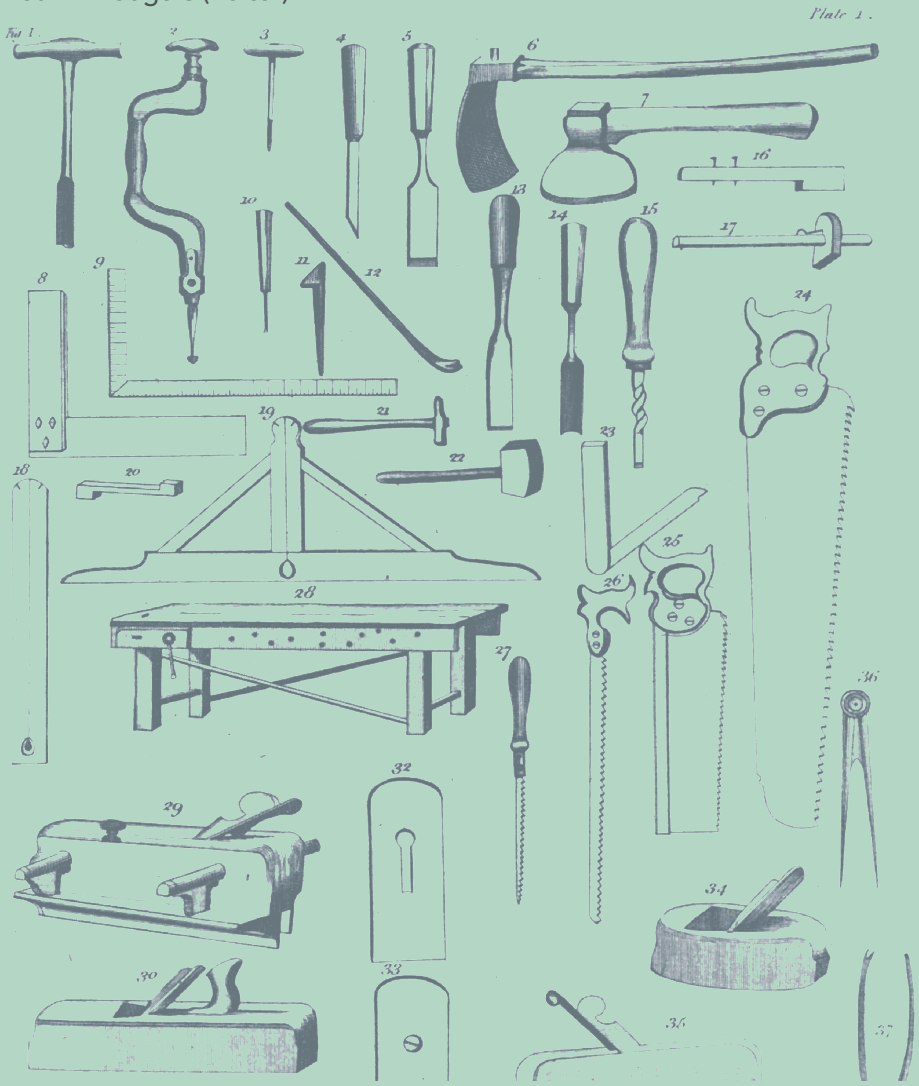
Please cite the published version

https://e-space.mmu.ac.uk

Design Research for Change

Symposium papers presented at the Design Museum 11-12 December 2019

Paul A. Rodgers (Editor)



ISBN 978-1-86220-369-3

Edited by Paul A. Rodgers

Designed by Euan Winton

Published by
Lancaster University
Bailrigg
Lancaster
LA1 4YW
UK

To visit the Design Research for Change project website, go to: www.designresearchforchange.co.uk

All rights reserved. The rights of Rodgers to be identified as editor of this work has been asserted in accordance with the Copyright, Designs and Patents Act 1988.

Typeface: Avenir. Printed in an edition of 1000.

Design Research For Change 2019

Foreword

The breadth of topics covered at this Symposium is proof, if proof were needed, of the enormous value of design research. In areas that range from the future of urban living to justice systems and neuroscience, design research is providing the frameworks and methodologies to answer questions which span disciplinary and conceptual boundaries; in an era of ever greater interdisciplinarity, design research is, once again, ahead of the curve. It is for this reason that the Arts and Humanities Research Council is delighted to support UK and international Design research, whether through the Priority Area Leadership Fellowship, to which we have just awarded follow-on funding, or through our open call research portfolios, or through other channels. Design has long been a discipline on which we collaborate with our sibling councils at UKRI, and it features strongly among the Knowledge Transfer Partnerships we sponsor.

What we mean by "design" and "design research" is ever-changing, however, and it is right that the AHRC, and UKRI at large, keeps a close eye on those changes and responds to them in a way that allows the very best of innovative and transformative research to flourish. The impacts of that research – academic, economic and social – are enormously significant not only in and of themselves, but also in demonstrating the value of the field, and therefore the importance of the robust and ongoing public funding it richly deserves.

Professor Edward Harcourt
Director of Research, Strategy and Innovation
Arts and Humanities Research Council

Contents

Introduction

A quick search of the word "design" on Google today (22 October 2019) returns over 25,000,000,000 results. These results include design organisations, design degrees, design news, ideas about design, design jobs, design media, and links to a variety of design tools and processes. Similarly, today there are many different designers working across different disciplines, with different attitudes, different goals, different agendas, different ways of working, different ways of doing research, producing different outputs that embody different values, engagement, and impact. Perhaps, however, the connection between all of these diverse design activities is the iterative development of products, services, systems, experiences, spaces, and other designed stuff in order to improve the human experience. In other words, using the power of human creativity to improve humanity.

Today, with its application across a wide range of different disciplines and fields, design is being used to help address significant, complex, and global issues ranging from antimicrobial resistance to mobility, from healthy ageing to migration, and the development of more sustainable materials and processes to creating policy and governance at local, regional and national levels. And with its inherent agility and applicability, design helps shape the scientific and technological advances which are transforming the world around us.

In recent years, design research has witnessed a clear "social turn" where researchers have looked to make change in more socially-focused contexts as opposed to wholly commercial realms. This "social turn" has encompassed a range of activities and interventions that constitute a more "socially-driven" form of design, which suggests that researchers and practitioners from non-design disciplines are working in close collaboration with design researchers with the ambition to realise change in social, cultural, economic, and environmental situations.

The twenty papers in this Design Research for Change (DR4C) book examine this "social turn" in design in detail and explore how contemporary forms of design research are increasingly involved in a range of social, cultural, economic, environmental and political action. The research included in this book highlights a variety of significant roles that design researchers play in some of the most challenging issues we face, both in the UK and globally.

Narvekar *et al's* paper "*Creative Interventions in the Juvenile Justice System of India: A Systemic Inquiry*" illustrates how design and gamification can be used to enact change in the juvenile justice system in India. Borin and Galluzzo in their paper, "*Over the Emptiness: Interpretations and Expression of the Term in the Spaces of Disused Cinemas in Milan*", analyse and investigate new possible forms and uses for empty cinema spaces in Milan.

Light's paper, "*Redesigning Design for Culture Change: Theory in the Anthropocene*", argues that design research needs to learn from cultural theory that positions culture as evolving and performative to ensure that design, which is low on theory of transformation, can be (re)designed to enact real culture change. In an educational context, Kerres and Getto's paper "Design Research for Educational Change: Methodologies for Exploring the Future of Learning" describes the development of a meta-project, based on a network of several university and national institutes, devoted to the development of a methodology of design-based research with a focus on change projects, design-based approaches and the analyses of success factors for change.

In "*Metaphors and Imaginaries in Design Research for Change*", Lockton *et al* discuss how design methods (metaphors, mental imagery, and other forms of imaginaries) can be used more effectively to influence how people act and make sense of the world and deal with large-scale challenges in health, environment, politics, and social contexts. Palomino and Defeo's paper "*Material Design Innovation: Fish Leather, a New Environmentally-Friendly Material*" reports on a collaborative project between the Icelandic tannery Atlantic Leather and the Italian analytical laboratory Ars Tinctoria connecting fashion designers, scientists and leather technicians from the UK, Italy, and Iceland to advance material innovation by using new technology (water-based ink digital printing methods) on fish leather as an alternative to conventional leather to encourage more sustainable fashion practices.

"*The Ripple Effects of Social Design - A Model to support New Cultures of Evaluation in Design Research*" by Eva Knutz and Thomas Markussen articulates a need for developing an evaluation culture that is primarily concerned with design outcomes. They use a social design case (a game-based intervention designed for family visits in maximum-security prisons) to identify ripple effects leading to three types of value - social value, demand value, and research value. Hackney et al present their work entitled "*Designing a Sensibility for Sustainable Clothing (S4S):*

Affective Activism" that combines arts with social science research methods to investigate how creative activities might shape a sensibility for sustainable clothing and promote pro-environmental behaviour change through making fibre, using waste fabric and modifying clothes.

Scott *et al's* paper "*Why Knitting Now? Textile Design Research as a Driver for Educational Change*" reports on work in collaboration with the Crafts Council (UK) and sixteen schools across Yorkshire that has used knitting as a tool for designing and making across a variety of scales to reposition textiles as a vehicle to respond to global challenges such as the environmental problems of textile colouration. Katharina Vones and Ian Lambert's paper "*Material Reality to Materiality: Ocean Plastic and Design Research*" brings together material exploration and designer-maker education methods to bear on a major environmental issue with huge public interest through a critically and scientifically engaged process, rooted in places and communities affected by complex and significant environmental issues.

In "S*trange Encounters: A Series of Posters Investigating the Hybrid Embodiment of Indo-Canadian Identity*", Krishna Balakrishnan's paper acknowledges the many forms of otherness that exist from differences in subjectivity, gender, race, class, temporal and spatial geographic location and dislocation to produce a series of visual artefacts that discuss hybrid embodiments of Indo-Canadian identity. Salisbury et al present ongoing research that explores how design, in the form of smart textiles, can aid upper limb rehabilitation and consider further the person's extended emotional needs through the considered implications of use of types of tools and approaches within the highly diverse lifestyles of individuals who have suffered a stroke in their paper entitled "*Wearing Your Recovery: 3.0*".

"T*he Fair Energy Mark in the Making: Framing a Citizen-led Campaign by Participatory Design*" by Laura Santamaria presents a design intervention that explored citizen empowerment in the context of the Fair Energy Mark campaign - a citizen-led action aimed to raise practice standards and address power imbalances in the energy supply sector. By integrating design and communicative action theories with participatory design and community organising methodologies the work highlights opportunities to amplify the impact of design research for social change. Lise Amy Hansen's paper "*So, What Do You Do? The Role of Design Research for Innovation towards Work-life Inclusion*" reports on the roles design research has played in a large innovation project in Norway – InnArbeid - where technology and services are developed for social change. In particular, the roles that design research has played in teasing out novel areas of opportunity for creating and in particular co-creating technology-supported services that support work-life inclusion of young people with developmental, intellectual disabilities (ID).

Ivanova and Flory in their paper entitled "*Design meets Neuroscience: Future Directions for Developing and Implementing Design Probes*" outline recent advances in neuro-technologies, and the pivotal role user experience design might play across a wide range of analogue and digital applications at individual, community, and global level ranging from learning and education interventions to innovation of large-scale healthcare options. Nneka Sobers' paper "*Intervention without Imperialism: An Equitable Approach to Design Research*" examines a hybridized and anti-exploitative design research methodology that is unpacked through a case study of a community in Accra, Ghana. Emphasising equity, self-determination, deep dialogue, and context-sensitivity, the design research presented in the paper resulted in the co-creation of a grassroots waste management system that illustrates notions of the role and mechanics of dismantling systems of oppression as a socially-conscious designer.

Endrejat et al's paper "*Advancing Sustainability at Universities through Design Thinking Education*", presents a case study describing how a team of students addressed the problem of disposable cups usage within a university (TU Braunschweig) using design thinking methods to reduce the usage of single-use cups. Rachel Kelly's paper "*The Voices of the Cordillera: Digitising an Oral Tradition*" describes a collaborative project between the Philippines-based CordiTex project and Manchester School of Art to support the future digitization of indigenous weaving traditions within the Cordillera region of the Northern Philippines. The paper includes the development of a Learning Framework and Toolkit to support the preservation of an oral-based weaving tradition and to develop interventions for creative practice and knowledge-based change. The paper highlights the voice of oral craft traditions and describes the relationships between different voices which can be heard within authored works such as hand-woven textiles.

In "*Tweaking Retirement-Living: Introducing Design Thinking & Coffee Bars to Shared Lounges*", Sam Clark describes research that aims to explore what the homes of older people could look like in the future. This research has been undertaken at a time when there exists a major societal challenge of housing a 'super-aged' UK population, and the particular needs and aspirations of active third-agers. Clark's research advances 'designerly' modes of inquiry, resulting in design-relevant feedback for those involved in the production of retirement-living environments and how housing providers can use this information to develop more appealing options. Simone Gumtau's paper "*The Future of Seafaring: What Can Design Add? Designing an On-board User-interface to Predict Engine faults on Marine Vessels, Lowering Fuel Costs and Emissions*" describes a collaborative project between a communication designer, data scientists, and engineers at the University of Portsmouth working with a consortium of companies in the marine industry around the Solent in the South East of England. The aims of the project is to add economic and environmental value to marine engineering services in order to retain market competitiveness,

to comply with international standards to reduce fuel consumption and emission through innovation, and also to provide a better user experience through design.

This rich set of papers are the end result of a lengthy process that began with an amazing response to the call-for-papers for the Design Research for Change (DR4C) symposium held at the Design Museum, London on Wednesday 11 and Thursday 12 December 2019. We received 62 papers from researchers based in countries all over the world including Australia, USA, India, China, Sweden, Germany, Italy, Norway, Denmark, Israel, Greece, Turkey and the UK. After a thorough review process, twenty papers were accepted for this book and presentation in a single-track session over the course of the two days at the Design Museum, London.

The Design Research for Change (DR4C) symposium and subsequent book are both much-needed, timely, and significant. The papers in this book address one or more broad and challenging themes highlighted in the original call-for-papers. We were interested to hear and see how design researchers working with others are making and contributing to change in areas such as energy and the environment, education, public services, health and social care. The call-for-papers was intended to be inclusive (not exhaustive) and contributions were encouraged that challenged these themes and others.

We invited authors to submit high-quality, previously unpublished, original contributions that explored one or more of the DR4C symposium themes. We asked authors to consider critically a number of questions including:

What they (as design researchers) are changing and why?
What difference(s) their design research is making?
Who decides what to change?
Who decides/evaluates if this change is "positive" or "good" or "enough"?

What impact has your change delivered and at what cost?
Also, we asked authors to consider how their design research addresses one or more of the following questions:

What have you tried to change through your design research?
Who has activated the change and who has been affected by that change?
What evidence do you have for the change that you claim?
When has your design research brought about positive change and when has it been detrimental?

Further, more broadly and looking to the future we asked authors to consider the following:

What should design research change now?
Can design research really change anything?
What will you do to make change?

In what ways do you envision the impact of such change to be evaluated?

Given the reach and interdisciplinary nature of many forms of contemporary design research it is anticipated that the rich mix of papers in this book that cross disciplinary, methodological, geographical and conceptual boundaries highlights the wide-ranging social, cultural and economic impact of emerging forms of design research. This book will be of interest to practitioners and researchers in a wide range of disciplines. This will not only include design researchers, design practitioners, and design academics but the book will be of significant interest to researchers and practitioners in other areas including (but not limited to) education, healthcare, government, biotechnology, engineering, management, computing, and business.

Professor Paul A. Rodgers
AHRC Design Leadership Fellow
Imagination, Lancaster University

The digitisation of cordillera weaving: Designing a new oral tradition

Rachel Kelly

Abtsract

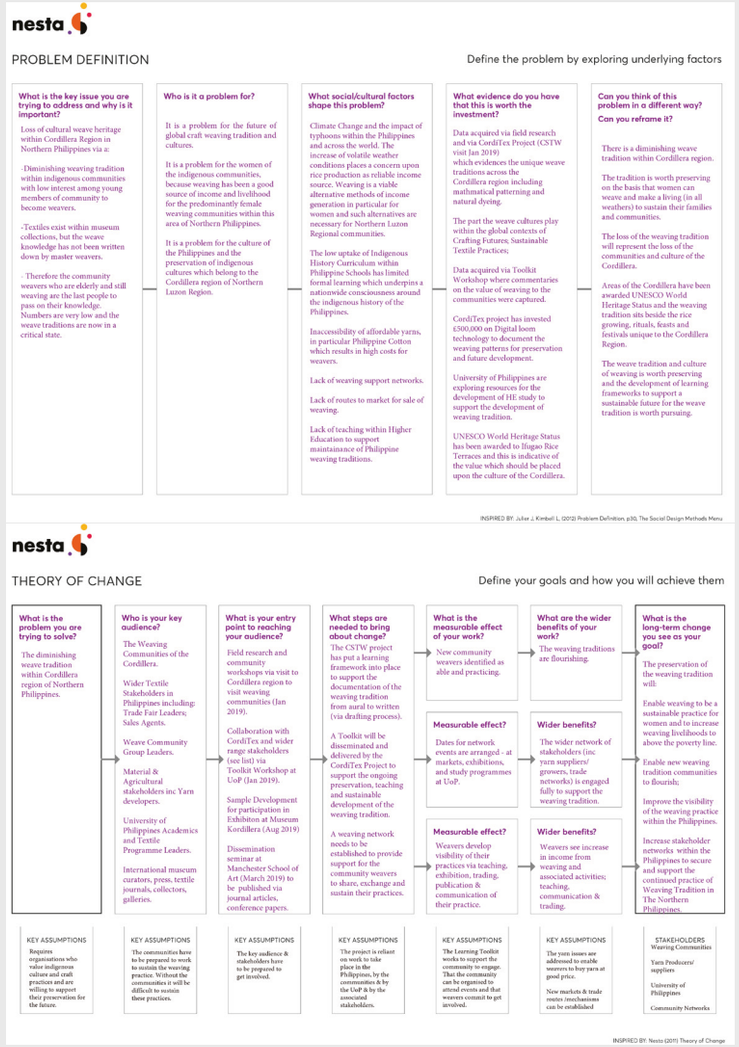
Under the remit of the UN Global Challenges Sustainable Goal 4, it must be understood that the capital value of knowledge preservation needs to be elevated by the economic benefits of formal education and the ongoing and often lifelong socio-economic impact it creates. The development and support of ethnolinguistic weaving practice may enable real-world benefits for Philippine society, culture, the environment and the economy; it may address global challenges of diminishing craft skill bases and knowledge and it may encourage an education ecosystem which challenges dominant craft and design education structures…

It has been evidenced that while the Cordilleran weaving tradition has the status of National Heritage within the Philippines, the numbers of community weavers able to practice is dwindling. A 2019 British Council & Crafts Council / Crafting Futures grant project enabled a collaboration between the Philippines based CordiTex project and Manchester School of Art to support the future digitization of indigenous weaving tradition within the Cordillera region of the Northern Philippines entitled: Creating a Sustainable Textile Future for Women via the Digitization of Cordillera Weaving Tradition (CSTFW) project. This project developed a Learning Framework and Toolkit to support the preservation of an oral based weaving tradition and to develop interventions for practice and knowledge based change. The project raises the voice of oral craft traditions and presents a heteroglossia, defined by Mikhail Bhaktin (1895 – 1975) to describe the relationships between different voices which can be heard within authored works such as hand woven textiles. The CSTFW project is considering the structures and systems from an educational and social standpoint to understand the perspectives for change this project identifies. Our rationale was to listen, observe and consider the research context and its challenges, in order to be able to respond with effective and useful strategies for support. We asked if the weaving tradition of the Cordillera is to transform and change from the problems it faces, what impact might the shift from of an oral to a digital tradition create?

We became a part of the CordiTex project in their second year out of three years funding and we brought Crafting Futures based research questions from our project funders. The British Council Crafting Futures project asks, How can craft generate economic opportunities and enhance livelihoods for women? and, how can the global craft sector address the declining youth engagement in the practice as well as the growing intergenerational divide? These questions sit beyond the CordiTex project aims and part of our work in the collaboration, has been to consolidate our differing research destinations and aims.

Research Context

In the Cordillera region a rich tradition of weaving can be traced back through time for centuries. Cordillera weaving occupies a niche, that is



Figures 1 & 2. Nesta Problem Definition & Theory of Change plans devised by Kelly, 2018

cultural, functional, and which represents the artistry of ethnolinguistic communities in the northern Luzon geographic region. The major groups in the region include the Ifugao, Kalinga, Tinguian, Kankana-ey, Apayao and Ibaloy, each presenting unique histories, rituals, language and weaving styles. The weaving techniques across the whole Cordillera region and communities is represented by a weaving design process and culture which is underpinned by distinct religious, socio-political and mathematical values. The process of weaving is often taught from grandparent to grandchild and features a meditative process of counting from memory which weavers learn from a young age. The uptake of weaving amongst younger women today and the knowledge of weaving techniques, pattern structures and traditions

are diminishing due to a range of socio-political and economic factors. Weaving knowledge is not held in a written form but is passed on via an oral tradition, where the holders of this knowledge are mainly elderly women 'Master Weavers'. The impact of the oral tradition as an unwritten knowledge base for Cordillera weaving is now in a critical state and the weaving tradition may become extinct.

> *"The focus of the CordiTex research was conducted among the Tinguian of Abra in northern Luzon, who had scarce documentation of its weaving tradition, but revealed the most intricate designs based on the collections from the museums in the US. The weaving declined in the 1980s, and only one Tinguian community in Manabo, Abra is still weaving, and natural dyeing is revived in Penarubia, Abra. Most of the master weavers are elders and many who passed away without transmitting knowledge to the younger generation" (Salvador-Amores 2018).*

Project Approach

The groups of weavers from the Cordillera are identified by their ethnolinguistic languages which define their cultures and represent identities specific to place, ritual, beliefs and work. The Cordillera ethnolinguistic groups were traditionally "a society made up of small, dispersed, rivalrous groups, with a reputation for wildness (e.g. headhunting)" (Rosaldo 1980). The difference between the knowledge systems, culture, and material knowledge held within the Cordillera communities and the knowledge we hold as research practitioners is distinct. The value of the weaving community languages and voices is a richness we as western contemporary educators find hard to improve upon.

In terms of approaching data collection we employed phenomenological and ethnographic methods including field research and deep hanging out (Geertz 1998). Such approaches meant that we were located in the research context where we could listen, looked, feel and remember rather than walk around with a notebook or camera. We were fortunate to have a photographer with us during our first field visit (Arnold Salvador-Amores) and his photographs tell a visual story of the project. Amores captured what we couldn't always see and our reflections on the data he collected via the photographs have supported us to figure the range of practitioner identities and voices we encountered (Holland; Lachicotte; Skinner & Cain 1998)

This project held a mirror up to us as researchers, educators and women and we the project team of Rachel Kelly and Dr Michelle Stephens maintained an identity as textile practitioners and weavers rather than researcher outsiders (Walmsley 2018). A Design Thinking Cycle was employed post-field visit, as an evaluation methodology to move the research from understanding to exploration and materialization (Cross

2011). A Theory of Change model (Nesta 2018) was the backbone of our methodology and we utilised our model to inform the project research questions, aims and outcomes. The Theory of Change framework was key to embedding a consideration of the wider landscape of change in which this project is located.

Research Part 1: Field visits to five Cordilleran weaving communities in Kiangen, Abra, Manabo, Santiago and Mindoro

While the CordiTex project is looking to preserve the Cordillera weaving tradition, our research focused upon two communities who are considered in most critical need of support due to the near decline of their tradition. The communities from the Abra delta area near to Llocos Sur and the South China Sea are described as having Ibaloy and Tinguian heritage (Tolentino 2018). Both groups weave textiles such as the Binakul which was a cloth originally used to call upon the wind gods to warn off dangerous spirits.

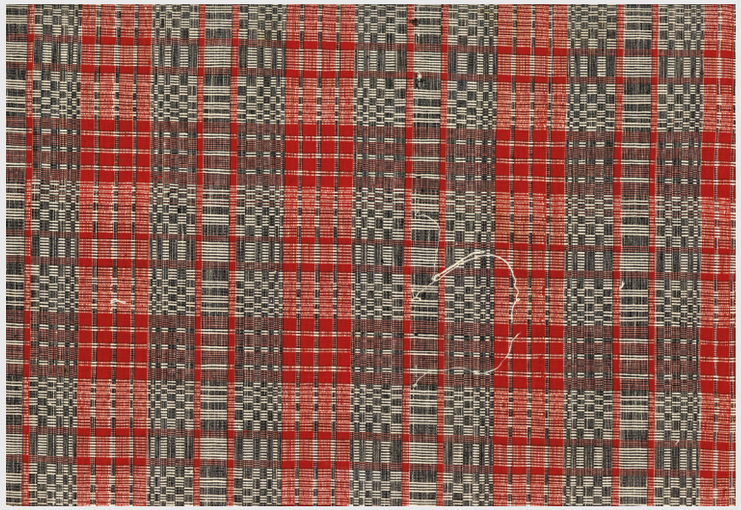


Figure 3: Binakul Fabric. Credit CordiTex Archive

Groups such as those who live in Manabo & Illocos are geographically dispersed communities of Tinguian heritage having had to move due to deforestation and problems faced as a result of environmental problems developing in rice growing (Gabattiss 2018; Glover & Stone 2018). The groups have an identity which is demonstrated by their ethnolinguistic language and the representations of their language by their textiles. If their textiles disappear, a large part of their identity will also be diminished.

The Manabo community from the Abra Delta

The Manabo community has a status and history that places it in a superior position in the hierarchy of weaver communities and culture in the Cordillera, due to the complex weaving patterns and fine

cotton yarns used. Paradoxically, it is now in the position of being the community most at risk from the weaving tradition dying out and they cite many reasons, but the inaccessibility of Philippine yarns which are sold for export before they are even planted is making it too costly for them to weave. There is activism within the Philippines seeking to remedy the inaccessibility of Philippine Cotton and the UNESCO heritage status of the rice terraces is going some way to support the preservation of Philippine cotton growing (Glover & Stone 2018).

Manabo is a new village still under construction, mainly consisting of breeze-block houses with foot weaving looms housed in a garage. From what we were told, the village had moved to this new location from their traditional area due to a change to growing tapioca rather than rice.

The Manabo women weavers we met were all united in their view as to why weaving was declining in their community, via specifically, the lack of interest in young women to become weavers. The decline in

Figure 4 Manabo Village Garage which houses last remaining community looms. Credit Amores 2019

weaving take up means that the end of weaving in the community will come when the older Master Weavers we met, die. Our project partner had arranged during our visit to collect a loom belonging to the community to take back to the Museum Kordillera due to lack of space in the garage space and because it was unlikely ever to be used again.

There was a sense of despair that the young of the community were either not prepared nor interested in learning to weave. With this group in particular, the potential of weaving as a good source of income could be developed and our project had been designed with this type of community in mind. Our rationale as researchers was to is scrutinise what we saw and understood to be true, and we have been mindful not to over romanticise the problem, but to seek via our evidence if positive outcomes for the preservation of the weaving tradition may emerge.

Figure 5. Manabo Community Weavers. Credit Amores 2019

A shift in the tone of the visit came when researcher Stephens showed examples of her digital weaving work to the community on her mobile phone. The group became mesmerised by the images and the conversation opened up. The Manabo weavers, in a sense

Figure 6. Dr Michelle Stephens mobile Phone. Credit Amores 2019

decided to listen to us because they were interested in talking about weaving rather than talking about the problems in their community. The exchange with the phone opened up a creative space where we were able to introduce our project and to demonstrate hand and digital weave drafting methods. Explaining that they could write down their designs and that they could be developed in many ways as a result.

Drafting is the notational language required for the translation of woven fabric into a binary design code which will enable weaving to be developed, patterns to be preserved and for the draft to be used as a teaching tool.

Figure 7. Manabo Community Weavers look at mobile phone weaving images. Credit Amores 2019)

Figure 8. Manabo Community Weavers learn to draft their weaving. Credit Amores 2019

> *"…draft notation uses graph paper as a framework. The space between its evenly spaced verticals is understood to indicate the warp threads, that between the horizontals, spaced similarly and intersecting at right angles, the filling threads. The little squares thus formed denote the intersection of warp and weft… of course more than the thread construction has to be identified in the analysis of a cloth…when these facts have been established, all the information required for the reproduction of a cloth has been ascertained, for the procedure of weaving is merely a matter of inference" (Albers, 2017: 22).*

The weavers saw the potential to enable the expression of their ideas via the drafting process and each weaver became fully engaged in what we were showing them. The Master Weaver worked with quick marks and the other weavers worked slowly and precisely. The drafting process became an expression of their signatures, just as they are the writers of their cloth. What the oral tradition holds on to is the un-common nuances of textile language manifested in work which is crafted and made rather than designed. Drafting is the written notation of woven

structures, so is a design process. The binary language of drafting is universal and this first writing of a draft was the first step away from the oral tradition. For these women it was the first time they had written their designs down.

It is implied by the oral tradition that the draft process creates a boundary object with which to mediate between the tradition and the present (Star & Griesemer 1989). The drafting process in this context became a mediating practice and the workshop which took place in the small garage space captured a sense of future potential which the Learning Tool Kit will hopefully enable within contexts such as the Manabo.

The concerns of the weavers are the lack of young people prepared or interested to take up weaving. There was a sense of despair that this is the situation. With this group in particular, the potential of weaving to be a good source of income needs to be communicated better to the non-weaving community members and there was a sense that the

Figure 9. Manabo Community Weavers working at outside table. Credit Amores 2019

weaving might be a nuisance to other activities. The contrast between the lack of space in the garage with the 'packed-in' looms with the freedom of space the impromptu workshop and draft process created was startling. The workshop ended with the weavers, sat outside in the fresh air at an outdoor table with the women continuing to draft their patterns after the project team had left.

The Sabangan Weavers Association in Santiago Ilocos Sur

The Sabangan Weavers Association comprises three elderly women weavers and one granddaughter; Talin 85, Ibing 75 and Petra 79 and Shara 16. Within this visit we observed a rare apprentice pairing between grandmother Talin and granddaughter Shara, who practices sections of weaving on her grandmothers loom. We were also exposed to the affect climate change is having upon these communities directly and in the home of Talin which is very close to the South China Sea wall, she had lost sections of her roof in the December 2018 typhoons.

Figure 9. Manabo Community Weavers working at outside table. Credit Amores 2019

Figure 10. Master Weaver Mam Talin.

This community will hopefully benefit from our project in particular, via the development of the Learning Tool Kit, which will support apprentice learners to work with more independence via the introduction of portable weaving technology, access to a weavers network and weave learning hub. In the research reflections we have made since we undertook the first field visit, we have looked closer at the choices such women face in choosing weaving as a livelihood. We have used a range of perspectives and methodologies to understand how the development of a language-based understanding of their identity (Gadamer 2006) might better support the weaving women to maintain strength in their choices. We heard many stories of women who were master weavers who gave up and now walk the highways selling eggs. Shara, the apprentice Sabangan weaver was in school but has since January 2019 dropped out to look after her family.

Figure 11. Master weaver Mam Talin's typhoon damaged home.

To contrast with the despairing situation we were presented with, there were also high levels of actualizing/wellbeing (Maslow 1943) demonstrated by the elderly weavers in that they work independently, they are long living, active and they are Masters in their craft. The manner in which weaving has been a central part of their family's communities and the oral tradition which has enabled the weaving to be passed on is remarkable. Concerns for the Sabangan women are their very low income and their exposure to environmental dangers such as typhoons and tsunamis, but wellbeing comes from their independence and

autonomy and from the act (or ritual) of weaving rather than the income they generate.

Figure 12. Apprentice weaver.

Being a weaver is the identity taken by these women and they demonstrate this via:

- Their independence
- Their work from home
- Pride via photographs of work in the home
- Participation in education projects
- Family support structure and the connectiveness across generations
- Direct selling, costing measuring and business capability
- Peace at work – one weaver described her loom as 'her office'

The undertaking of the field visits such as the one to the Sabangan community raises a concern that sympathetic researcher lenses can often be adopted when complex and challenging research experiences are encountered. We experienced confusion as to how we were responding to these women and our responses were polarized between positive and negative.

Discourse Analysis and in particular discourse analysis which uses a Foucauldian process of text reversal (Lee & Poynton 2000) can be used as a method to help reveal an alternative to the sympathetic bias which can arise from projects such as ours. The visit to meet the elderly Sabangan women living in extreme poverty could affect our bias and understanding. The results of a reversal analysis (see figure 14) using a section of text highlighted above creates a picture which reveals an alternative perspective of the structures which are implicated in the enabling of such a despairing position for the Cordillera weavers.

The process of translating the text into an opposite version of the truth, enables a version of the project which can be used to better undertake a response to the research questions asked How can craft

Figure 13. Talin's dry garden appeared like a paradise in contrast to her typhoon ravaged home.

generate economic opportunities and enhance livelihoods for women? By opening up the picture of the context via a discourse analysis, conceptual spaces are created around which to think, research and potentially to design interventions and tools which can support and enable the weavers to change their situation.

Our visits to the communities enabled us to understand the context first hand and exposed our biases, challenging us to seek a method to see different perspectives. Due to our research and practitioner led figuring

~~Concerns for the Sabangan women are their very low income.~~ (The Sabangan women work independently and survive on what they earn from their weaving) ~~Wellbeing comes from the act or ritual of weaving rather than the income generated.~~ (Weaving is an active practice, it is physical, repetitive and time consuming). ~~Being a weaver is the identity taken by these women and they demonstrated this via:~~ (Weaving is one of a range of work types available to these women, alternatives include egg selling, prostitution and factory work) demonstrated via:

- ~~Their independence;~~ Their Dependence;
- ~~Their work from home;~~ Their home is their place of work;
- ~~Pride via photographs of work in the home.~~ There are only pictures of their work;
- ~~Participation in education projects;~~ It is useful for education projects to use examples such as these women as data;
- ~~Family support structure and the connectiveness across generations;~~ Ties that bind;
- ~~Direct selling;~~ No one to support the sale of work;

~~Peace at work – one weaver described her loom as 'her office'.~~ Life is so challenging in terms of poverty that the sanctuary of work brings a sense of relief.

Figure 14. Discourse analysis undertaken as part of understanding research process.

(Holland; Lachicotte; Skinner & Cain 1998), we were able to adapt and respond to the situations we were presented with. We started to identify more deeply with the women and began to understand the wider implications for our research.

A Learning Tool Kit Development Workshop held at the University of the Philippines in Baguio

The Learning Tool Kit Development Workshop in Baguio was attended by Thirty-Five participants from The Northern Cordillera villages, academics and textile stakeholders. The methods used in preparing for the workshop reflected a process designed to most effectively meet the project aims and collect the data we required. A process for the multi-lingual multi stakeholder workshop was sought which enabled inclusive participation and a Lego© visualisation method (Lego© 2015; Blair and Rillo 2016) was used. Using Lego© we asked simple questions to generate meaningful qualitative data and the process replicated somewhat how oral teaching and learning works by supporting discourse to evolve and for the process to be captured via a shared group experience (Gauntlett 2011; Kelly 2017).

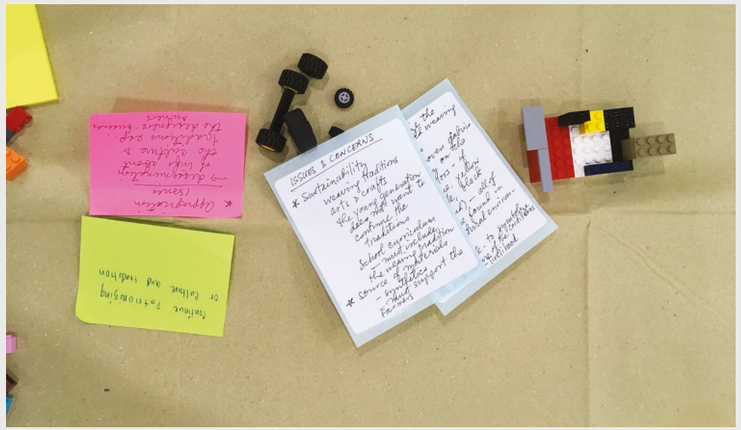
> *"…significant symbols – words for the most part but also gestures, drawings, musical sounds, mechanical devices… anything that is disengaged from its mere actuality and used to impose meaning upon experience" (Geertz 1973 p45 in Crotty 1998 p53)*

We posed three simple questions:

1. "Describe a place which is yours…
2. Tell us something only you know about Cordillera Weaving Tradition...
3. What most concerns you about the preservation of Cordillera Weaving Tradition?"

The community in the workshop revealed that they felt a pressure which is multi-layered where they are responsive to the range of voices from their past, present and from their children looking towards the future.

Figure 15. The Learning Tool Kit Workshop at University of Philippines in Baguio held 19th January.


ISSUES & CONCERNS
* Sustainability
Weaving traditions
arts & crafts
the young generation
don't want to
take part
Lack of
Traditions
Lack of
Traditional
Curriculum
Lack of
Traditional
Lack of
Traditional
Lack of
Traditional

the Threshold Concept (Meyer and Land 2003, 2005) required to enable digital weaving to take place, because it translates woven cloth into a binary language. By stepping through a knowledge portal during the workshop, a seed for change was sown.

The final part of the Learning Toolkit workshop was a tour offered by the CordiTex team of their project archives at the Museum Kordillera. While the weavers were amused at coming face to face with the work of their ancestors, there was a palpable sense of concern, or it could have been awe, when the weavers viewed the carefully preserved fabrics. The past and present collided at this moment and there was a huge contrast between the circumstances of the weavers and the high-tech air-controlled archive. The weavers returned, literally chilled, from the archive environment and we can only reflect that the experience was deeply affecting for the participants.

Figure 17. 'Mam' Master weaver speaking during the reflective plenary at the Learning Tool Kit Workshop. Credit Amores 2019

Figure 18 Weavers visit the Feasts and Rituals Exhibition at Museum Kordillera at UoP Baguio. Credit Amores, Jan 2019

Figure 19. Workshop participants visit the CordiTex project archive at Museum Kordillera in Baguio. Credit Amores, Jan 2019.

Figure 20. Workshop participants visit the CordiTex project archive at Museum Kordillera in Baguio. Credit Amores, Jan 2019

Discussion

The story of our project is that there is a diminishing weaving tradition within the Cordillera which is evidenced by the low interest among young members of the communities to become weavers. Elderly community weavers are and will be the last generation to pass on their knowledge in an oral tradition. Weaving knowledge has maintained the ethnolinguistic oral tradition where master weavers teach apprentices, but the weaving tradition is now in a critical state as the elderly weavers are dying.

Figure 21. Workshop participants visit the CordiTex project archive at Museum Kordillera in Baguio. Credit Amores, Jan 2019

The value of Cordillera weaving has been recognised by museums and by private collectors with cloths being documented, sold and collected globally. The CordiTex project aims to preserve Cordillera weave knowledge via the digital translation of the weave structures and by purchasing a specialized TC2 Digital Loom to use to translate the lost patterns. The Museum Kordillera will dedicate an exhibition in 2019 to the Cordillera weaving tradition, however, this preservation process is disconnected from the communities and weavers from which this culture of textiles has arisen.

Weaving has enabled trade and income for the predominantly female weaving communities within the Cordillera area of Northern Philippines for millennia. If weaving declines with the decline in culture (CordiTex 2018), a source of income and livelihood for women also declines. The Creating a Sustainable Textile Future for Women: Digitising Cordillera Weaving Tradition project aimed to address this. The weavers met via the project workshops and activities, expressed the paradise their work creates via the autonomy and sense of connection to their history, community and land their weaving provides. The weavers convinced us to support them to find methods to bring young women into weaving practice via a new learning system (Drafting), supported education, learning tools and apprenticeship.

The reflections of the weavers at the UoP Learning Tool Kit workshop and in the field and the small literature review undertaken so far, have enabled the identification of an emerging link between weaving practice and rice growing. The changes to rice growing as a main reliable income source for Northern Luzon Communities is changing (Glover & Stone, 2018) and weaving creates an opportunity within the changing climate as an enduring occupation which may in the future become more reliable than agricultural work. Climate change and the impact of typhoons within the Philippines is having a negative impact upon the rice growing eco-system and rice growing is under increased scrutiny as a possible contributor to climate change (Gabbattiss 2018).

The Indigenous History Curriculum within Philippine Schools (a K-12 level ages 3-12 years) has limited formal learning which aimed to underpin a nationwide consciousness around the ethnolinguistic history of the Philippines and in particular an understanding of ethnolinguistic cultural traditional crafts. The inaccessibility of affordable yarns in particular Philippine cotton which is mostly exported, has resulted in higher baseline material costs for weavers. The lack of weaving support networks, lack of routes to market for sale of weaving and lack of teaching within Higher Education to support maintenance of Philippine weaving traditions, all contribute to the problem identified.

The centrality of weaving in the lives of the women of the Cordillera region must not be underestimated. Weaving and the weaving communities have protected, clothed, and celebrated this society and the endeavours of the Crafting Futures project to reinforce the central

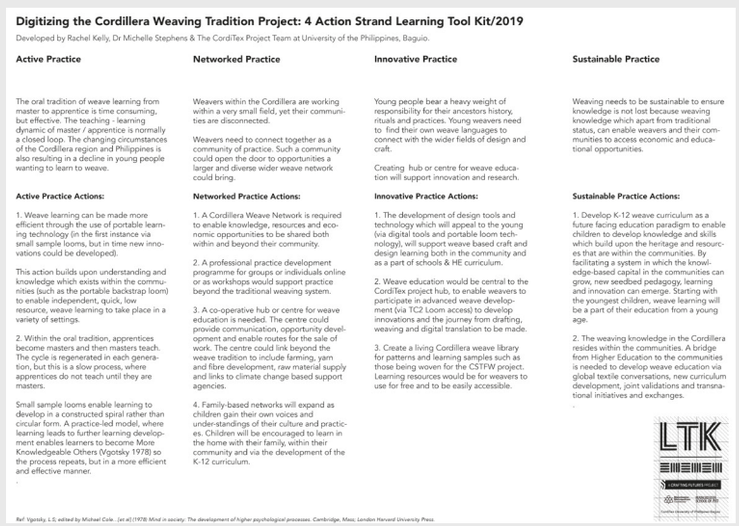
pillars of the Cordillera Weaving Tradition are commendable. However, if the position does not change then the outlook for the Cordilleran communities is depressing and for the women and their families and children, it is frightening and predictable. For the remaining communities who do not find or secure good work within their communities, there is the fearful move, to life in a city with its inherent risk of exploitation. Centuries of tradition, culture and an autonomous life that was a paradise, is in danger of disappearing. With this in mind we have developed a Learning Tool Kit Action Plan that we earnestly hope can assist in sustaining the weaving culture of the Cordillera.

Digitizing the Cordillera Weaving Tradition Project: 4 Action Strand Learning Tool Kit/2019.

Active Practice Actions:

1. Weave learning can be made more efficient through the use of portable learning technology (in the first instance via small sample looms, but in time new innovations could be developed). This action builds upon understanding and knowledge which exists within the communities (such as the portable backstrap loom) to enable independent, quick, low resource, weave learning to take place in a variety of settings.

2. Within the oral tradition, apprentices become masters and then masters teach. The cycle is regenerated in each generation, but this is a slow process, where apprentices do not teach until they are masters. Small sample looms enable learning to develop in a constructed spiral rather than circular form. A practice-led model,



Digitizing the Cordillera Weaving Tradition Project: 4 Action Strand Learning Tool Kit/2019

Developed by Rachel Kelly, Dr Michelle Stephens & The CordiTex Project Team at University of the Philippines, Baguio.

Active Practice

The oral tradition of weave learning from master to apprentice is time consuming, but effective. The teaching - learning dynamic of master / apprentice is normally a closed loop. The changing circumstances of the Cordillera region and Philippines is also resulting in a decline in young people wanting to learn to weave.

Active Practice Actions:

1. Weave learning can be made more efficient through the use of portable learning technology (in the first instance via small sample looms, but in time new innovations could be developed).

This action builds upon understanding and knowledge which exists within the communities (such as the portable backstrap loom) to enable independent, quick, low resource, weave learning to take place in a variety of settings.

2. Within the oral tradition, apprentices become masters and then masters teach. The cycle is regenerated in each generation, but this is a slow process, where apprentices do not teach until they are masters.

Small sample looms enable learning to develop in a constructed spiral rather than circular form. A practice-led model, where learning leads to further learning development enables learners to become More Knowledgeable Others (Vgotsky 1978) so the process repeats, but in a more efficient and effective manner.

Networked Practice

Weavers within the Cordillera are working within a very small field, yet their communities are disconnected.

Weavers need to connect together as a community of practice. Such a community could open the door to opportunities a larger and diverse wider weave network could bring.

Networked Practice Actions:

1. A Cordillera Weave Network is required to enable knowledge, resources and economic opportunities to be shared both within and beyond their community.

2. A professional practice development programme for groups or individuals online or as workshops would support practice beyond the traditional weaving system.

3. A co-operative hub or centre for weave education is needed. The centre could provide communication, opportunity development and enable routes for the sale of work. The centre could link beyond the weave tradition to include farming, yarn and fibre development, raw material supply and links to climate change based support agencies.

4. Family-based networks will expand as children gain their own voices and understandings of their culture and practices. Children will be encouraged to learn in the home with their family, within their community and via the development of the K-12 curriculum.

Innovative Practice

Young people bear a heavy weight of responsibility for their ancestors history, rituals and practices. Young weavers need to find their own weave languages to connect with the wider fields of design and craft.

Creating hub or centre for weave education will support innovation and research.

Innovative Practice Actions:

1. The development of design tools and technology which will appeal to the young (via digital tools and portable loom technology), will support weave based craft and design learning both in the community and as a part of schools & HE curriculum.

2. Weave education would be central to the CordiTex project hub, to enable weavers to participate in advanced weave development (via TC2 Loom access) to develop innovations and the journey from drafting, weaving and digital translation to be made.

3. Create a living Cordillera weave library for patterns and learning samples such as those being woven for the CSTFW project. Learning resources would be for weavers to use for free and to be easily accessible.

Sustainable Practice

Weaving needs to be sustainable to ensure knowledge is not lost because weaving knowledge which apart from traditional status, can enable weavers and their communities to access economic and educational opportunities.

Sustainable Practice Actions:

1. Develop K-12 weave curriculum as a future facing education paradigm to enable children to develop knowledge and skills which build upon the heritage and resources that are within the communities. By facilitating a system in which the knowledge-based capital in the communities can grow, new seedbed pedagogy, learning and innovation can emerge. Starting with the youngest children, weave learning will be a part of their education from a young age.

2. The weaving knowledge in the Cordillera resides within the communities. A bridge from Higher Education to the communities is needed to develop weave education via global textile conversations, new curriculum development, joint validations and transnational initiatives and exchanges.

LTK

CRAFTING FUTURES PROJECT

Ref: Vgotsky, L.S; edited by Michael Cole ...[et al].(1978) *Mind in society: The development of higher psychological processes*. Cambridge, Mass; London Harvard University Press.

Figure 22. Learning Tool Kit Action Strands;

where learning leads to further learning development enables learners to become More Knowledgeable Others (Vgotsky 1978) so the process repeats, but in a more efficient and effective manner.

Networked Practice Actions

1. A Cordillera Weave Network is required to enable knowledge, resources and economic opportunities to be shared both within and beyond their community.

2. A professional practice development programme for groups or individuals online or as workshops would support practice beyond the traditional weaving system.

3. A co-operative hub or centre for weave education is needed. The centre could provide communication, opportunity development and enable routes for the sale of work. The centre could link beyond the weave tradition to include farming, yarn and fibre development, raw material supply and links to climate change based support agencies.

4. Family-based networks will expand as children gain their own voices and under-standings of their culture and practices. Children will be encouraged to learn in the home with their family, within their community and via the development of the K-12 curriculum.

Innovative Practice Actions

1. The development of design tools and technology which will appeal to the young (via digital tools and portable loom technology), will support weave based craft and design learning both in the community and as a part of schools & HE curriculum.

2. Weave education would be central to the CordiTex project hub, to enable weavers to participate in advanced weave development (via TC2 Loom access) to develop innovations and the journey from drafting, weaving and digital translation to be made.

3. Create a living Cordillera weave library for patterns and learning samples such as those being woven for the CSTFW project. Learning resources would be for weavers to use for free and to be easily accessible.

Sustainable Practice Actions

1. Develop K-12 weave curriculum as a future facing education paradigm to enable children to develop knowledge and skills which build upon the heritage and resources that are within the communities. By facilitating a system in which the knowledge-based capital in the communities can grow, new seedbed pedagogy, learning and innovation can emerge. Starting with the youngest children, weave learning will be a part of their education from a young age.

2. The weaving knowledge in the Cordillera resides within the communities. A bridge from Higher Education to the communities is needed to develop weave education via global textile conversations, new curriculum development, joint validations and transnational initiatives and exchanges.

References

Albers, A., Weber, N. F., & Cirauqui, M. (2017). On Weaving: New Expanded Edition. Princeton University Press.

Adorno, T. (1973) The Jargon of Authenticity. London: Routledge & Kegan Paul Ltd.

Blair, S., & Rillo, M. (2016) Serious Work: How to facilitate meetings and workshops using Lego® Serious Play® Method. Promeet.

Britt, H., & Shaw, A. (2014). Transitioning between Industry and Education: The Centre for Advanced Textiles (CAT) Case Studies in Digital Textile Printing.

Buruma, A. (2007). The library as muse: using Liberty's textile archive 1. Art Libraries Journal, 32(3), 32-35.

Cross, N.; (2011) Design thinking: understanding how designers think and work. Oxford, Berg.

CordiTex (2018) Executive Summary. University of Philippines, Baguio City.

CordiTex (2018) Study Brochure. University of Philippines, Baguio City

Gauntlett, D. (2011). Making is connecting: The social meaning of creativity, from DIY and knitting to YouTube and web 2.0. Cambridge: Polity.

Holland, D., Lachicotte Jr., W., Skinner, D., & Cain, C. (1998). Identity and agency in cultural worlds, Cambridge: Harvard University Press.

Gabattiss, J.; (2018) Rice farming up to twice as bad for climate change as previously thought, study reveals. Accessed: https://www.independent.co.uk/environment/rice-farming-climate-change-global-warming-india-nitrous-oxide-methane-a8531401.html

Gadamer, H.G., (2006) Truth and Method. Continuum, London.

Glover, D & Stone, G.D.; (2018) Heirloom rice in Ifugao: an 'anti-commodity' in the process of commodification, The Journal of Peasant Studies, 45:4, 776 804, DOI: 10.1080/03066150.2017.1284062

Kelly, R. (2017). Ikebana: a collaborative design pedagogy. The Design Journal, 20 (sup1), S1093-S1105.

Lave, J.; Wenger, E.; (1991) Situated Learning. Legitimate peripheral participation, Cambridge: University of Cambridge Press

Lee, A. & Poynton, C., (2000) Culture & Text. Rowman & Littlefield, London.

Lego® www.lego.com/en-us/seriousplay/trademark-guidelines

Maslow, A.; (1943) accessed https://www.learning-theories.com/maslows-hierarchy-of-needs.html

Meyer, J.H.F. & Land, R., (2003) 'Threshold concepts and troublesome knowledge (1): Linkages to ways of thinking and practicing within the disciplines. Improving Student Learning – Ten Years On. C. Rust (Ed), OCSLD, Oxford.

Meyer, J.H.F. & Land, R., (2005) 'Threshold concepts and troublesome knowledge (2): Epistemological considerations and a conceptual framework for teaching and learning'. R. High Educ 49: 373. doi:10.1007/s10734-004-6779-5

NESTA Theory of Change method (accessed via https://www.nesta.org.uk/toolkit/theory-change/)

Rosaldo, R. 1980. Ilongot headhunting 1883–1974. A study in society and history.

Stanford, CA, USA: Stanford University Press cited in Glover, D & Stone, G.D.; (2018)

Sanchez, A.; (1990) The Textile Industry in the Philippines and Thailand: A comparison. Journal of Philippine Development. No 30. Vol XVII, No 1. 1990. Accessed: https://pdfs.semanticscholar.org/ebf7/ef18af2782a55949e7da6d727b37ff5a77d8.pdf

Tolentino, JR. D.; (2018) Feasts of Merit: wealth, status and feasting in Luzon Cordillera. Museum Kordilera, University of Philippines, Baguio City.

Walmsley, W.; (2018) Deep hanging out in the arts: an anthropological approach to capturing cultural value, International Journal of Cultural Policy, 24:2, 272-291, DOI:10.1080/10286632.2016.1153081

Vygotsky, L.S; edited by Michael Cole [et al] (1978) Mind in society: The development of higher psychological processes. Cambridge, Mass; London Harvard University Press.

Acknowledgements

The author would like to thank the project partner Dr Michelle Stephens, the CordiTex team, in particular Professor Analyn Salvador-Amores and the Chancellor of the University of Philippines, Baguio Dr Raymundo Rovillos. The project was initiated by Professor Alice Kettle. The author thanks the participants in the field and the weavers and stakeholders who attended the workshop in January 2019 and who kindly offered their models, reflections and insights which have enriched this research and paper. The project was the result of a Crafts Council & British Council Crafting Futures Grant and we thank Kendall Robbins from the British Council for her support throughout the project. Thanks, is also given to Martyn Evans, Kristina Niedderer, Annie Shaw and Joe McCullagh at Manchester School of Art who have supported this research.

Acknowledgements

Producing a book like this one is never an individual activity – it is always a collaboration between many people. This book is no different and I have had the privilege of working with some amazing individuals on the design and development of Design Research for Change and the associated symposium at the Design Museum, London on 11 and 12 December 2019. The design and production of the book that you hold in your hands just now has been completed by Euan Winton, a PhD student at Imagination, Lancaster University. I am sure you will agree Euan has done a great job.

I would also like to gratefully acknowledge the invaluable support I have received on the design and development of the Design Research for Change symposium and book from my amazing AHRC Design Leadership Fellow team – Pam Allen (Fellowship Coordinator), Francesco Mazzarella (Research Associate) and Loura Conerney (Communications Officer). My special thanks go to Harry Kerr (Strategy and Development Manager for Digital and Design, AHRC) and Professor Edward Harcourt (AHRC Director of Research, Strategy and Innovation) for their continuing support and fantastic enthusiasm on the Design Leadership Fellowship over the last three years.

I have also had the pleasure of working with some of the leading design researchers in the UK who have supported me over the course of the three year AHRC Design Leadership Fellowship in their capacity as an Advisory Group member, namely - Professor Tom Inns (cofink Ltd.), Dr Alison Prendiville (London College of Communication, UAL), Professor Andrew Walters (Cardiff Metropolitan University), Dr Emma Dewberry (The Open University), Professor James Moultrie (Cambridge University), Professor Lorraine Gamman (Central St. Martins, UAL), Professor Martyn Evans (Manchester Metropolitan University), Professor Paul Chamberlain (Sheffield Hallam University), Sevra Davis (Design Museum, London), Sian Whyte (Design Council), Professor Sue Walker (Reading University), Professor Teal Triggs (Royal College of Art), and Professor Tracy Bhamra (Loughborough University). I wish to record my thanks for their relentless energy and commitment to Design research in all its guises.

A special mention is due to all of the reviewers who gave up their precious time, often at very short notice, and completed their reviews effectively and efficiently. The reviewers were involved in reviewing over 60 papers that were submitted to the Design Research for Change Symposium call-for-papers. Massive thanks goes to Professor Rachel Cooper (Imagination, Lancaster University), Dr Giovanni Innella (School of the Art Institute of Chicago), Professor Lorraine Gammon (Central St. Martins, UAL), Professor Paul Chamberlain (Sheffield Hallam University), Sevra Davis (Design Museum, London), Sian Whyte (Design Council), Professor Sue Walker (Reading University), Professor Teal Triggs (Royal College of Art), Professor Tracy Bhamra (Loughborough University), Dr David Hands (Imagination, Lancaster University), Professor James Moultrie (Cambridge University), Professor Paul Coulton (Imagination, Lancaster University), Dr Emma Dewberry (The Open University), Dr Roger Whitham (Imagination, Lancaster University), Professor Andrew Walters (Cardiff Metropolitan University), Dr Alison Prendiville (London College of Communication, UAL), Professor Tom Inns (cofink Ltd.), Professor Leon Cruickshank (Imagination, Lancaster University), Dr Helen Charman (V&A Museum, London), Professor Stuart Walker (Imagination, Lancaster University), Professor Jo-Anne Bichard (Helen Hamlyn Centre for Design, Royal College of Art), Professor Craig Bremner (Charles Sturt University), Professor Dan Lockton (Carnegie Mellon University), Dr Jonathan Ventura (Hadassah Academic College), Professor Ann Light (University of Sussex), Dr Chris McGinley (Helen Hamlyn Centre for Design, Royal College of Art), Professor Mark Roxburgh (University of Newcastle, Australia), and Professor Peter Lloyd Jones (Imagination, Lancaster University).

I would also like to thank all of my fantastic colleagues at Imagination, Lancaster University, as well as all the authors in this book with whom we have collaborated over the last few months. Finally, I would like to extend my thanks also to all of the people I have forgotten to mention.

Professor Paul A. Rodgers
AHRC Design Leadership Fellow
Imagination, Lancaster University

The twenty-one papers in this Design Research for Change (DR4C) book examine and explore how contemporary forms of design research are increasingly involved in a range of major social, cultural, economic, and environmental challenges. The research included in this book highlights a variety of significant roles that design researchers play in some of the most complex and demanding issues we face, such as energy and the environment, education, public services, health and social care both in the UK and globally.

This rich set of papers are the end result of a lengthy process that began with an amazing response to the call-for-papers for the Design Research for Change (DR4C) symposium. We received 62 papers from researchers based in countries all over the world including Australia, USA, India, China, Sweden, Germany, Italy, Norway, Denmark, Israel, Greece, Turkey and the UK. After a thorough review process, twenty-one papers were accepted for this book and presentation in a single-track session over the course of two days at the Design Museum, London on Wednesday 11 and Thursday 12 December 2019.

Lancaster University

imagination LANCASTER

the DESIGN MUSEUM

UKRI Arts and Humanities Research Council